

provided that said heterocyclic oxidation base is not chosen from 4,5-diamino-6-hydroxy-pyrimidine and 3,4-diaminohydroxy-pyrazole, and
provided that said heterocyclic coupler is not chosen from indole, indoline, monocyclic pyridine, and phenazine compounds.

33. The composition according to Claim 32, wherein said keratin fibers are human keratin fibers.

34. The composition according to Claim 33, wherein said human keratin fibers are hair.

35. The composition according to Claim 32, wherein said at least one enzyme of the laccase type is chosen from laccases of plant origin, animal origin, fungal origin and bacterial origin, and laccases obtained by biotechnology.

36. The composition according to claim 32, wherein said at least one enzyme of the laccase type is of plant origin and is chosen from the laccases extracted from plants chosen from Anacardiaceae, Podocarpaceae, Rosmarinus off., Solanum tuberosum, Iris sp., Coffea sp., Daucus carota, Vinca minor, Persea americana, Catharethus roseus, Musa sp., Malus pumila, Ginkgo biloba, Monotropa hypopithys, Aesculus sp., Acer pseudoplatanus, Prunus persica, and Pistacia palaestina.

37. The composition according to Claim 32, wherein said at least one enzyme of the laccase type is of microbial origin or obtained by biotechnology.

38. The composition according to Claim 32, wherein said at least one enzyme of the laccase type is chosen from the laccases obtained from fungi chosen from

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Polyporus versicolor, Rhizoctonia praticola, Rhus vernicifera, Scytalidium, Polyporus pinsitus, Myceliophthora thermophila, Rhizoctonia solani, Pyricularia orizae, Trametes versicolor, Fomes fomentarius, Chaetomium thermophile, Neurospora crassa, Colorius versicol, Botrytis cinerea, Rigidoporus lignosus, Phellinus noxius, Pleurotus ostreatus, Aspergillus nidulans, Podospora anserina, Agaricus bisporus, Ganoderma lucidum, Glomerella cingulata, Lactarius piperatus, Russula delica, Heterobasidion annosum, Thelephora terrestris, Cladosporium cladosporioides, Cerrena unicolor, Coriolus hirsutus, Ceriporiopsis subvermispora, Coprinus cinereus, Panaeolus papilionaceus, Panaeolus sphinctrinus, Schizophyllum commune, Dichomitius squalens, and variants of all said fungi.

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39. The composition according to claim 32, wherein said at least one enzyme of the laccase type is in an amount ranging from 0.5 Lacu to 200 Lacu units per 100 g of said composition.

40. The composition according to claim 32, wherein said heterocyclic oxidation bases are chosen from pyrimidine derivatives, pyrazole derivatives, and acid addition salts of said heterocyclic oxidation bases.

41. The composition according to Claim 40, wherein said pyrimidine derivatives are chosen from 2,4,5,6-tetraaminopyrimidine, 4-hydroxy-2,5,6-triaminopyrimidine, pyrazolopyrimidine derivatives, and acid addition salts of said pyrimidine derivatives.

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42. The composition according to Claim 41, wherein said pyrazolpyrimidine derivatives are chosen from pyrazolo pyrimidine-3,7-diamine, 2-methylpyrazolo pyrimidine-3,7-diamine, 2,5-dimethyl pyrazolo pyrimidine-3,7-diamine, pyrazolo pyrimidine-3,5-diamine, 2,7-dimethylpyrazolo pyrimidine-3,5-diamine, 3-aminopyrazolo pyrimidin-7-ol, 3-amino-5-methylpyrazolo pyrimidin-7-ol, 3-amino-pyrazolo pyrimidin-5-ol, 2-(3-aminopyrazolo-pyrimidin-7-ylamino)ethanol, 3-amino-7- β -hydroxyethylamino-5-methylpyrazolo pyrimidine, 2-(7-aminopyrazolo pyrimidin-3-ylamino)ethanol, 2-ethanol, 2-ethanol, 5,6-dimethylpyrazolo pyrimidine-3,7-diamine, 2,6-dimethylpyrazolo pyrimidine-3,7-diamine, and 2,5,N7,N7-tetramethylpyrazolo pyrimidine-3,7-diamine, and acid addition salts of said pyrazolpyrimidine derivatives and tautomeric forms of said pyrazolpyrimidine derivatives, when a tautomeric equilibrium exists.

43. The composition according to Claim 40, wherein said pyrazole derivatives are chosen from 4,5-diaminopyrazole, 4,5-diamino-1-methyl-pyrazole, 1-benzyl-4,5-diaminopyrazole, 3,4-diamino-pyrazole, 1-benzyl-4,5-diamino-3-methylpyrazole, 4-amino-1,3-dimethyl-5-hydrazinopyrazole, 4,5-diamino-3-methyl-1-phenylpyrazole, 4,5-diamino-1-tert-butyl-3-methylpyrazole, 4,5-diamino-3-tert-butyl-1-methyl-pyrazole, 4,5-diamino-1-ethyl-3-methylpyrazole, 4,5-diamino-1-ethyl-3-(4-methoxyphenyl) pyrazole, 4,5-diamino-1-ethyl-3-hydroxymethylpyrazole, 4,5-diamino-3-hydroxymethyl-1-methylpyrazole, 4,5-diamino-3-hydroxymethyl-1-isopropylpyrazole,

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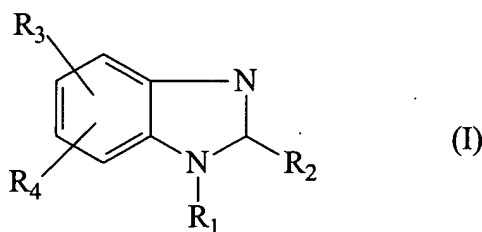
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4,5-diamino-3-methyl-1-isopropylpyrazole, and acid addition salts of said pyrazole derivatives.

44. The composition according to claim 32, wherein said heterocyclic couplers are chosen from benzimidazole derivatives, benzomorpholine derivatives, sesamol derivatives, pyrazoloazole derivatives, pyrroloazole derivatives, imidazoloazole derivatives, pyrazolopyrimidine derivatives, pyrazoline-3,5-dione derivatives, pyrrolo-oxazoline derivatives, pyrazolo-thiazole derivatives, thiazoloazole S-oxide derivatives, thiazoloazole S,S-dioxide derivatives, and acid addition salts of said heterocyclic couplers.

45. The composition according to Claim 44, wherein said benzimidazole derivatives are chosen from the compounds of formula (I), and their acid addition salts:



in which:

-R₁ is chosen from hydrogen and C₁-C₄ alkyl groups,

-R₂ is chosen from hydrogen, C₁-C₄ alkyl groups, and phenyl groups,

-R₃ is chosen from hydroxyl groups, amino groups, and methoxy groups,

-R₄ is chosen from hydrogen, hydroxyl groups, methoxy groups, and C₁-C₄ alkyl groups;

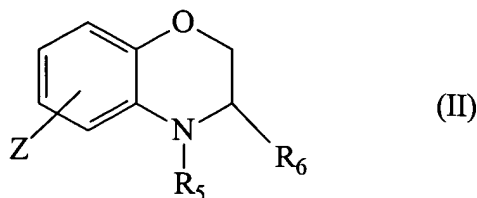
with the proviso that:

- (a) when R₃ is an amino group, then it occupies position 4;
- (b) when R₃ occupies position 4, then R₄ occupies position 7; and
- (c) when R₃ occupies position 5, then R₄ occupies position 6.

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46. The composition according to Claim 44, wherein said benzimidazole derivatives are chosen from 4-hydroxybenzimidazole, 4-amino-benzimidazole, 4-hydroxy-7-methylbenzimidazole, 4-hydroxy-2-methylbenzimidazole, 1-butyl-4-hydroxy-benzimidazole, 4-amino-2-methylbenzimidazole, 5,6-dihydroxybenzimidazole, 5-hydroxy-6-methoxy-benzimidazole, 4,7-dihydroxybenzimidazole, 4,7-dihydroxy-1-methylbenzimidazole, 4,7-dimethoxy-benzimidazole, 5,6-dihydroxy-1-methylbenzimidazole, 5,6-dihydroxy-2-methylbenzimidazole, 5,6-dimethoxy-benzimidazole, and acid addition salts of said benzimidazole derivatives .

47. The composition according to Claim 44, wherein said benzimidazole derivatives are chosen from compounds of formula (II), and their acid addition salts:



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a)

-Z is chosen from hydroxyl groups and amino groups.

49. The composition according to Claim 44, wherein said sesamol derivatives are chosen from the compounds of formula (III) and their acid addition salts:



- R₇ is chosen from hydroxyl groups, amino groups, (C₁-C₄)alkylamino groups, monohydroxy (C₁-C₄)alkylamino groups, and polyhydroxy(C₂-C₄)alkyl-amino groups;

- R₈ is chosen from hydrogen, halogens, and (C₁-C₄) alkoxy groups.

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and acid addition salts of said pyrazoloazole derivatives.

52. The composition according to Claim 44, wherein said pyrroloazole derivatives are chosen from:

- 5-cyano-4-ethoxycarbonyl-8-methylpyrrolo-1,2,4-triazole,
- 5-cyano-8-methyl-4-phenylpyrrolo-1,2,4-triazole,
- 7-amido-6-ethoxycarbonylpyrrolo benzimidazole,

and acid addition salts of said pyrroloazole derivatives.

53. The composition according to Claim 44, wherein said imidazoloazole derivatives are chosen from:

- 7,8-dicyanoimidazolo imidazole,
 - 7,8-dicyano-4-methylimidazolo imidazole,
- and acid addition salts of said imidazoloazole derivatives.

54. The composition according to Claim 44, wherein said pyrazolopyrimidine derivatives are chosen from:

- pyrazolo pyrimidin-7-one,
 - 2,5-dimethylpyrazolo pyrimidin-7-one,
 - 2-methyl-6-ethoxycarbonylpyrazolo pyrimidin-7-one,
 - 2-methyl-5-methoxymethylpyrazolo pyrimidin-7-one,
 - 2-tert-butyl-5-trifluoromethylpyrazolo pyrimidin-7-one,
 - 2,7-dimethylpyrazolo pyrimidin-5-one,
- and acid addition salts of said pyrazolopyrimidine derivatives.

55. The composition according to Claim 44, wherein said pyrazoline-3,5-dione derivatives are chosen from:

- 1,2-diphenylpyrazoline-3,5-dione,
 - 1,2-diethylpyrazoline-3,5-dione,
- and acid addition salts of said pyrazoline-3,5-dione derivatives.

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56. The composition according to claim 32, wherein said at least one oxidation dye is present in a concentration ranging from about 0.0001% to about 12% by weight relative to the total weight of said composition.

57. The composition according to Claim 32, wherein said at least one oxidation dye is present in a concentration ranging from about 0.005% to about 6% by weight of the total weight of said composition.

58. The composition according to claim 32, further comprising:

(a) at least one benzenic oxidation base chosen from para-phenylenediamines, bis(phenylalkylenediamines, orthophenylenediamines, para-aminophenols, ortho-aminophenols, and acid addition salts of said benzenic oxidation base,

(b) at least one benzenic coupler chosen from meta-phenylenediamines, meta-aminophenols, meta-diphenols and acid addition salts of said benzenic coupler, and

(c) at least one direct dye.

59. The composition according to claim 32, wherein said acid addition salts of said at least one oxidation dye are chosen from hydrochlorides, hydrobromides, sulphates, tartrates, lactates, and acetates.

60. The composition according to claim 32, further comprising at least one carrier which is suitable for dyeing keratin fibers.

61. The composition according to claim 60, wherein said at least one carrier is chosen from water and at least one organic solvent.

63. A method of dyeing keratinous fibers, comprising the step of applying at least one dyeing composition to said keratinous fibers for a sufficient time to achieve a desired coloration, wherein said at least one dyeing composition comprises:

(b) at least one enzyme of the laccase type.

(a) storing a first composition;

(b) storing a second composition separately from said first composition;

(c) mixing said first composition with said second composition to form a mixture; and

(d) applying said mixture to said keratinous fibers for a sufficient time to achieve a desired coloration;

wherein said first composition comprises at least one oxidation base chosen from heterocyclic oxidation bases, heterocyclic couplers, and acid addition salts of said oxidation dyes, in a medium appropriate for dyeing keratinous fibers, provided that said

heterocyclic oxidation base is not chosen from 4,5-diamino-6-hydroxy- pyrimidine and 3,4-diaminohydroxypyrazole; and provided that said heterocyclic coupler is not chosen from indole, indoline, monocyclic pyridine, and phenazine compounds; and

wherein said second composition comprises at least one enzyme of the laccase type, in a medium appropriate for dyeing keratinous fibers.

65. A multicompartment device or a dyeing kit, comprising:

a first compartment containing a first composition comprising at least one oxidation base chosen from heterocyclic oxidation bases, heterocyclic couplers, and acid addition salts of said oxidation dyes, provided that said heterocyclic oxidation base is not chosen from 4,5-diamino-6-hydroxy- pyrimidine and 3,4-diaminohydroxypyrazole; and provided that said heterocyclic coupler is not chosen from indole, indoline, monocyclic pyridine, and phenazine compounds, in a medium appropriate for dyeing keratinous fibers; and

a second compartment containing a second composition comprising at least one enzyme of the laccase type, in a medium appropriate for dyeing keratinous fibers.--

REMARKS

Claims 1-31 have been canceled and new claims 32-65 are currently pending in this application. Support for claims 32-65 may be found in the specification as a whole, and claims 1-31, specifically. No new matter has been introduced by the amendments.

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